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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,858	12/21/2000	Masao Fukuyama	50427-726	6031

7590 02/13/2003

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EXAMINER

PERALTA, GINETTE

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/740,858

Applicant(s)

FUKUYAMA ET AL

Examiner

Ginette Peralta

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 1-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 14, 17 and 18 are rejected under 35 U.S.C. 102(a) as being anticipated by Hung et al. (U. S. Pat. 6,069,442).

Regarding claim 14, Hung et al. discloses in Fig. 2 an organic electroluminescent device that comprises a pair of electrodes (204, 206), and a layer structure sandwiched between the paired electrodes and including a charge transport layer (216, 218) and an emission layer (214), wherein the charge transport layer has a charge transport interference sub-layer therein, and the sub-layer is made of an inorganic compound or a metal.

Regarding claim 17, Hung et al. discloses that the sub-layer is made of an inorganic compound selected from oxides, halides or nitrides (col. 4, ll. 9-35).

Regarding claim 18, Hung et al. discloses that the sub-layer comprises a metal (col. 4, ll. 9-35).

*Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hung et al. (U. S. Pat. 6,208,075 B1).

Regarding claim 13, Hung et al. discloses in Fig. 3 and Example 5, an organic electroluminescent device that comprises a pair of electrodes (304, 308), and a layer structure sandwiched between the paired electrodes and including an organic layer (306, 312, 316) capable of transporting electrons or holes and an emission layer (314), wherein the organic layer has a charge transport interference sub-layer (306) therein.

Hung et al discloses the claimed invention with the exception of stating that the sub-layer has an ionization potential greater than the hole transport material or having an electron affinity smaller than the electron transport material. Hung et al. discloses that when the organic layer consists of a hole transport layer made of a hole transport material so that the sub-layer is made of an organic material that as shown in fig. 7 and

in col. 11, ll. 46-55 is quite conductive and shows a faster rising I-V curve, which is indicative that the polymer has an ionization potential greater than the hole transport material of the organic layer. Thus, it is an inherent property of the layer 306 that the ionization potential is greater than the hole transport material as shown by its conduction enhancing properties.

Regarding claim 14, Hung et al. discloses in fig. 3 and example 5 an organic electroluminescent device comprising a pair of electrodes (304, 308), and a layer structure sandwiched between the paired electrodes and including a charge transport layer and an emission layer (314) wherein the charge transport layer has a charge transport interference sub-layer therein, and the sub-layer is made of a mixture of both a hole transport material and an electron transport material.

Regarding claim 15, Hung et al. discloses the sub-layer being made of the mixture.

Regarding claim 16, Hung et al. discloses the claimed invention with the exception of ratio of the materials, but as the claimed ratio is in the range of 1:99 to 99:1, any composition, including the one taught by Hung et al. is included in the ratio.

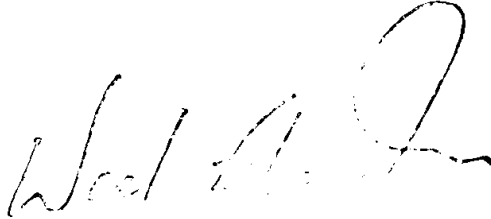
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ginette Peralta whose telephone number is (703)305-7722. The examiner can normally be reached on Monday to Friday 8:00 AM- 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703)308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

GP  
February 7, 2003

  
SUPERVISOR  
TECHNOLOGY CENTER